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EXAMINER	
KENNEDY, ADRIAN L	
ART UNIT	**PAPER NUMBER**
2121	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/709,970	Applicant(s) MISHRA, AMULYA	
	Examiner Adrian L. Kennedy	Art Unit 2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 June 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Examiner's Detailed Office Action

1. This Office Action is responsive to application **10/709,970**, filed **June 10, 2004**.

2. **Claims 1-16** have been examined.

Objection to the Specification

The specification is objected to under 37 CFR 1.75(d)(1) as not providing clear support for the phrase "computer readable medium". Rule 1.75(d)(1) requires that the same words and phrases used in the claims be found in the specification. Applicant uses the phrase "computer readable storage medium" in the specification and for the purposes of this office action the phrase "computer readable medium" will be interpreted to include the word "storage".

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-16 are rejected under 35 U.S.C. 101 as being directed to nonstatutory subject matter. In particular claims 1-7 are considered to be directed to a method, claims 8-12 are considered to be directed to software and claims 13-16 are considered to be directed to an apparatus, all in accordance with Patent Subject Matter Eligibility Requirements (MPEP 2106 [R-5]).

Claims 1-16 do not set forth a "useful, concrete and tangible result". In particular, it is not considered that these claims set forth a tangible result. Claims 1-7 do not produce a practical real world result. Claims 8-12 do not appear to produce any practical real world

result.. Claims 13-16 appear to be an apparatus which performs data manipulations but produces no real world output. Furthermore, claims 13-16 appear to be nothing more than software which is not patent eligible subject matter.

In particular it is unclear from applicant's claimed invention what the intended real world is. Having interpreted the language of the applicant's claimed invention in light of the disclosed invention, it is clear that the applicant's goal is to *"[reduce] the number of computations required to model a system"* (Paragraph 0012) but it is unclear what real world result is produced by applicant's claimed methods (claims 1-12) and apparatus (claims 13-16). The examiner takes the position that "modeling" as claimed is merely a manipulation of data and as a result is not a patent eligible real world result.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-6, 8-11, 13-16 are rejected under 35 U.S.C. 102(b) as being anticipated by *Guiver et al.* (USPN 5,809,490).

Regarding claim 1:

Guiver et al. teaches

A method of reducing number of computations (Column 2, Line 34-37; "*the present invention effectively filters out data in portion of the data space with a heavy distribution of data or examples in favor of those with fewer data or examples*"; The examiner takes the position that by reducing the amount of data to be processed, Guiver et al. reduces the number of process) when modeling several systems (C 4, L 3-9; "*the techniques and processes according to the present invention can be utilized in a wide range of technological arts, such as speech recognition, image recognition, financial modeling, target marketing, and various process control application in oil refineries, chemical plants, power plants and industrial manufacturing plants, among others*") using a neural network (C 2, L 26-27; "*the clusterizer is a neural network such as a Kohonen self-organizing map (SOM)*") , said method comprising:

receiving a first data set (C 4, L 43-44; "*the data selection apparatus acquires input data*") characterizing the behavior of a first system (C 3, L 41-46; "*the data collected varies according to the type of product being produced. For illustrative purposes, FIG. 1 shows the architecture of the computer supporting various process control data collection device such as various sensors and output driver in a representative plant*"), said first data set containing a first plurality of data elements (C 3, L 47-50; "*the representative plant is a refinery or chemical processing plant having a number of process variables such as temperature and flow rate variables*");

modeling said first system based on said first data set using said neural network, wherein a first set of weights are generated by said modeling said first system (C

7, L 6-11; "*each lattice cell is represented by a neuron associated with a P dimensional adaptable weight vector. The match between each weight factor is computed with every input. The best matching weight factor and some of its topological neighbors are then adjusted to better match the input points*"; The examiner takes the position that the creation of a weight vector and the adjusting of weight factors taught in the invention of Guiver et al. anticipates the generation of weights as taught in applicant's claimed invention);

receiving a second data set characterizing the behavior of a second system, said second data set containing a second plurality of data elements (C 9; L 58-60; "*if the iteration threshold has not been reached, the routine loops back to step 188 to continue the training process*"; The examiner takes the position that the data used for re-training the network is equivalent to the "second data", and that the "second system" is nothing more than the first system after being processed by the neural network.);

determining whether said first plurality of data elements follow a similar pattern as said second plurality of data elements (C 9, L 64-66; "*the Kohonen neuron with the smallest distance adjusts its weight to be closer to the values of the input data*"; The examiner takes the position that determining of the distance between the weights and the input data is the method Guiver et al. uses to determine whether first and second data elements follow the same pattern) and

modeling said second system based on said second data set using said neural network, wherein said first set of weights are used as initial weights while

> modeling said second system if said first plurality of data elements follow a similar pattern as said second plurality of data elements (C 9, L 64-66; "*the Kohonen neuron with the smallest distance adjusts its weight to be closer to the values of the input data. The neighbors of the winning neuron also adjust their weights to be closer to the same input data vector*"; The examiner takes the position that the initial winning neuron weight is used in the following training process regardless of whether the inputs (first data elements) follow a similar pattern of the outputs (second data elements). This position is based on the fact that Guiver et al. teaches in Column 10, Lines 4-11 that the correct output doesn't have to be known in order to determine a winning weight).

The examiner takes the position that first and second sets of data are the initial model data and training data respectively.

Regarding claim 2:

Guiver et al. teaches

The method comprising storing said first set of weights and a second set of weights in a non-volatile storage (C 4, L 17-20; "*one or more hard disk drives, preferably a CD-Rom player 117 and a disk drive*"; The examiner takes the position that by teaching the use of non-volatile storage while not explicitly reciting the specific teaching of what is stored in said storage, Guiver et al. anticipates applicant's specific recitation of storing weights in said non-volatile storage), wherein said second set of weights are generated by modeling said second system (C 7, L 50-52; "*the initial weights of the SOM network may be chose*

using a number of strategies").

Regarding claim 3:

Guiver et al. teaches

The method wherein random values are used as initial weights (C 7, L 50-52; "*the initial weights of the SOM network may be chose using a number of strategies. Preferably, the initial weights are selected using a random number generator*") while modeling said second system if said first plurality of data elements do not follow a similar pattern as said second plurality of data elements (C 9, L 64-66; "*the Kohonen neuron with the smallest distance adjusts its weight to be closer to the values of the input data. The neighbors of the winning neuron also adjust their weights to be closer to the same input data vector*"; The examiner takes the position that the initial winning neuron weight is used in the following training process regardless of whether the inputs (first data elements) follow a similar pattern of the outputs (second data elements). This position is based on the fact that Guiver et al. teaches in Column 10, Lines 4-11 that the correct output doesn't have to be known in order to determine a winning weight).

Regarding claim 4:

Guiver et al. teaches

The method wherein said determining comprises:

fitting said first data set into a first curve (C 2, L 30-34; "*input space of interest*"; The examiner takes the position that the input space taught in the invention of

Guiver et al. anticipates the first curve of applicant's claimed invention), wherein said first curve is represented in the form of a first polynomial function having a first set of coefficients (C 6, L 2-4; "*the model to be developed using this working set may be any data-driven form of model: linear, neural, polynomial, rational polynomial*"; The examiner takes the position that by teaching the use polynomial, Guiver et al. anticipates the use of functions as taught in applicants claimed invention. Additionally the examiner takes the position that coefficients are an inherent part of polynomials);

fitting said second data set into a second curve (C 4, L 50-53; "*output space*"; The examiner takes the position that the output space taught in the invention of Guiver et al. anticipates the first curve of applicant's claimed invention), wherein said second curve is represented in the form of a second polynomial function having a second set of coefficients (C 6, L 2-4; "*the model to be developed using this working set may be any data-driven form of model: linear, neural, polynomial, rational polynomial*");

computing a distance between said first set of coefficients and said second set of coefficients (The examiner takes the position that coefficients are equivalent to the weights taught in the invention of Guiver et al. This position is based on applicant's specification which teaches in Paragraph 0047 that "[the] distance [the] each point from a corresponding point on the line/curve may be computed as [the] difference between the observed and predicted results". The process of calculating distance between observed result and predicted result using

coefficients is anticipated by the process of calculating the distance between input data and output data using weight as taught by Guiver in Column 9, Line 64 – Column 10, Line 32); and

checking (C 7, L 8-9; "*the match between each weight factor is computed*") whether said distance is less than a threshold (C 10, L 28-30; "*minimum distance*"), wherein said first plurality of data elements are determined to follow a similar pattern as said second plurality of data elements if said distance is less than said threshold.

Regarding claim 5:

Guiver et al. teaches

The method wherein each of said first plurality of data elements and said second plurality of data elements is normalized to a pre-specified range prior to said fitting (C 4, L 61-63; "*the routine normalizes the augmented data. Preferably, the variable are normalized so that they are mean zero, and have values between –1 and +1*").

Regarding claim 6:

Guiver et al. teaches

The method wherein each of said first set of coefficients and said second set of coefficients is normalized to a pre-specified range (C 7, L 37-39; "*once the winning neuron is chosen, the weight of the winning neuron must be adjusted and all units within its neighborhood are also adjusted*"; C 10, L 27-30; "*the Kohonen neuron with the*

minimum distance is called the winner and has an output of 1.0, while other Kohonen neurons have an output of 0.0") prior to said computing (The examiner takes the position that the adjusting of weights takes place prior to computing the distance between input data and output data when training the Kohonen SOM in the invention of Guiver et al. (C 9, L 64 - C 10, L 33)).

Regarding claim 8:

Guiver et al. teaches

A computer readable medium (C 4, L 21-24; "*flash ROM*") carrying one or more sequences of instructions (C 4, L 21-24; "*flash ROM 122 which contains boot-up information for the computer system S*") causing a digital processing system (C 3, L 9-11; "*computer system S which provides the processing capability*") reduce number of computations (Column 2, Line 34-37; "*the present invention effectively filters out data in portion of the data space with a heavy distribution of data or examples in favor of those with fewer data or examples*") in a neural network (C 2, L 26-27; "*the clusterizer is a neural network such as a Kohonen self-organizing map (SOM)*") modeling (C 2, L 39-43; "*the present inventions results in models which perform better over the entire space*") several data sets (C 2, L 45-47; "*the analyzer is subsequently trained with important sub-sets of the training data*"), wherein execution of said one or more sequences of instructions by one or more processors contained in said digital processing system causes said one or more processors to perform the actions of:

receiving a first data set (C 4, L 43-44; "*the data selection apparatus acquires input data*") characterizing the behavior of a first system (C 3, L 41-46; "*the data collected varies according to the type of product being produced. For illustrative purposes, FIG. 1 shows the architecture of the computer supporting various process control data collection device such as various sensors and output driver in a representative plant*"), said first data set containing a first plurality of data elements (C 3, L 47-50; "*the representative plant is a refinery or chemical processing plant having a number of process variables such as temperature and flow rate variables*");

modeling said first system based on said first data set using said neural network, wherein a first set of weights are generated by said modeling said first system (C 7, L 6-11; "*each lattice cell is represented by a neuron associated with a P dimensional adaptable weight vector. The match between each weight factor is computed with every input. The best matching weight factor and some of its topological neighbors are then adjusted to better match the input points*"; The examiner takes the position that the creation of a weight vector and the adjusting of weight factors taught in the invention of Guiver et al. anticipates the generation of weights as taught in applicant's claimed invention);

receiving a second data set characterizing the behavior of a second system, said second data set containing a second plurality of data elements (C 9; L 58-60; "*if the iteration threshold has not been reached, the routine loops back to step 188 to continue the training process*"; The examiner takes the position that the data used

for re-training the network is equivalent to the "second data", and that the "second system" is nothing more than the first system after being processed by the neural network.);

determining whether said first plurality of data elements follow a similar pattern as said second plurality of data elements (C 9, L 64-66; "*the Kohonen neuron with the smallest distance adjusts its weight to be closer to the values of the input data*"; The examiner takes the position that determining of the distance between the weights and the input data is the method Guiver et al. uses to determine whether first and second data elements follow the same pattern); and

modeling said second system based on said second data set using said neural network, wherein said first set of weights are used as initial weights while modeling said second system if said first plurality of data elements follow a similar pattern as said second plurality of data elements (C 9, L 64-66; "*the Kohonen neuron with the smallest distance adjusts its weight to be closer to the values of the input data. The neighbors of the winning neuron also adjust their weights to be closer to the same input data vector*"; The examiner takes the position that the initial winning neuron weight is used in the following training process regardless of whether the inputs (first data elements) follow a similar pattern of the outputs (second data elements). This position is based on the fact that Guiver et al. teaches in Column 10, Lines 4-11 that the correct output doesn't have to be known in order to determine a winning weight).

Regarding claim 9:

Guiver et al. teaches

The computer readable medium further comprising storing said first set of weights and a second set of weights in a non-volatile storage (C 4, L 17-20; "*one or more hard disk drives, preferably a CD-Rom player 117 and a disk drive*"; The examiner takes the position that by teaching the use of non-volatile storage while not explicitly reciting the specific teaching of what is stored in said storage, Guiver et al. anticipates applicant's specific recitation of storing weights in said non-volatile storage), wherein said second set of weights are generated by modeling said second system (C 7, L 50-52; "*the initial weights of the SOM network may be chose using a number of strategies*").

Regarding claim 10:

Guiver et al. teaches

The computer readable medium wherein random values are used as initial weights (C 7, L 50-52; "*the initial weights of the SOM network may be chose using a number of strategies. Preferably, the initial weights are selected using a random number generator*") while modeling said second system if said first plurality of data elements do not follow a similar pattern as said second plurality of data elements (C 9, L 64-66; "*the Kohonen neuron with the smallest distance adjusts its weight to be closer to the values of the input data. The neighbors of the winning neuron also adjust their weights to be closer to the same input data vector*"; The examiner takes the position that the initial winning neuron weight is used in the following training process regardless of whether the inputs

(first data elements) follow a similar pattern of the outputs (second data elements). This position is based on the fact that Guiver et al. teaches in Column 10, Lines 4-11 that the correct output doesn't have to be known in order to determine a winning weight).

Regarding claim 11:

Guiver et al. teaches

The computer readable medium wherein said determining comprises:

fitting said first data set into a first curve (C 2, L 30-34; "*input space of interest*"; The examiner takes the position that the input space taught in the invention of Guiver et al. anticipates the first curve of applicant's claimed invention), wherein said first curve is represented in the form of a first polynomial function having a first set of coefficients (C 6, L 2-4; "*the model to be developed using this working set may be any data-driven form of model: linear, neural, polynomial, rational polynomial*"; The examiner takes the position that by teaching the use polynomial, Guiver et al. anticipates the use of functions as taught in applicants claimed invention. Additionally the examiner takes the position that coefficients are an inherent part of polynomials);

fitting said second data set into a second curve (C 4, L 50-53; "*output space*"; The examiner takes the position that the output space taught in the invention of Guiver et al. anticipates the first curve of applicant's claimed invention), wherein said second curve is represented in the form of a second polynomial function having a second set of coefficients (C 6, L 2-4; "*the model to be developed using*

this working set may be any data-driven form of model: linear, neural, polynomial, rational polynomial");

computing a distance between said first set of coefficients and said second set of coefficients (The examiner takes the position that coefficients are equivalent to the weights taught in the invention of Guiver et al. This position is based on applicant's specification which teaches in Paragraph 0047 that "[the] distance [the] each point from a corresponding point on the line/curve may be computed as [the] difference between the observed and predicted results". The process of calculating distance between observed result and predicted result using coefficients is anticipated by the process of calculating the distance between input data and output data using weight as taught by Guiver in Column 9, Line 64 – Column 10, Line 32); and

checking (C 7, L 8-9; "*the match between each weight factor is computed*") whether said distance is less than a threshold (C 10, L 28-30; "*minimum distance*"), wherein said first plurality of data elements are determined to follow a similar pattern as said second plurality of data elements if said distance is less than said threshold.

Regarding claim 13:

Guiver et al. teaches

An apparatus in a digital processing system said apparatus reducing number of computations when modeling several systems using a neural network, said apparatus comprising:

means for receiving a first data set (C 4, L 43-44; "*the data selection apparatus acquires input data*") characterizing the behavior of a first system (C 3, L 41-46; "*the data collected varies according to the type of product being produced. For illustrative purposes, FIG. 1 shows the architecture of the computer supporting various process control data collection device such as various sensors and output driver in a representative plant*"), said first data set containing a first plurality of data elements (C 3, L 47-50; "*the representative plant is a refinery or chemical processing plant having a number of process variables such as temperature and flow rate variables*");

means for modeling said first system based on said first data set using said neural network, wherein a first set of weights are generated by said modeling said first system (C 7, L 6-11; "*each lattice cell is represented by a neuron associated with a P dimensional adaptable weight vector. The match between each weight factor is computed with every input. The best matching weight factor and some of its topological neighbors are then adjusted to better match the input points*"; The examiner takes the position that the creation of a weight vector and the adjusting of weight factors taught in the invention of Guiver et al. anticipates the generation of weights as taught in applicant's claimed invention);

means for receiving a second data set characterizing the behavior of a second system, said second data set containing a second plurality of data elements (C 9; L 58-60; "*if the iteration threshold has not been reached, the routine loops back to step 188 to continue the training process*"; The examiner takes the position that the data used for re-training the network is equivalent to the "second data", and that the "second system" is nothing more than the first system after being processed by the neural network);

means for determining whether said first plurality of data elements follow a similar pattern as said second plurality of data elements (C 9, L 64-66; "*the Kohonen neuron with the smallest distance adjusts its weight to be closer to the values of the input data*"; The examiner takes the position that determining of the distance between the weights and the input data is the method Guiver et al. uses to determine whether first and second data elements follow the same pattern); and

means for modeling said second system based on said second data set using said neural network, wherein said first set of weights are used as initial weights while modeling said second system if said first plurality of data elements follow a similar pattern as said second plurality of data elements (C 9, L 64-66; "*the Kohonen neuron with the smallest distance adjusts its weight to be closer to the values of the input data. The neighbors of the winning neuron also adjust their weights to be closer to the same input data vector*"; The examiner takes the position that the initial winning neuron weight is used in the following training process regardless of whether the inputs (first data elements) follow a similar

pattern of the outputs (second data elements). This position is based on the fact that Guiver et al. teaches in Column 10, Lines 4-11 that the correct output doesn't have to be known in order to determine a winning weight).

Regarding claim 14:

Guiver et al. teaches

The apparatus further comprising means for storing said first set of weights and a second set of weights in a non-volatile storage (C 4, L 17-20; "*one or more hard disk drives, preferably a CD-Rom player 117 and a disk drive*"; The examiner takes the position that by teaching the use of non-volatile storage while not explicitly reciting the specific teaching of what is stored in said storage, Guiver et al. anticipates applicant's specific recitation of storing weights in said non-volatile storage, wherein said second set of weights are generated by modeling said second system (C 7, L 50-52; "*the initial weights of the SOM network may be chose using a number of strategies*").

Regarding claim 15:

Guiver et al. teaches

The apparatus wherein random values are used as initial weights (C 7, L 50-52; "*the initial weights of the SOM network may be chose using a number of strategies. Preferably, the initial weights are selected using a random number generator*") while modeling said second system if said first plurality of data elements do not follow a similar pattern as said second plurality of data elements (C 9, L 64-66; "*the Kohonen*

neuron with the smallest distance adjusts its weight to be closer to the values of the input data. The neighbors of the winning neuron also adjust their weights to be closer to the same input data vector"; The examiner takes the position that the initial winning neuron weight is used in the following training process regardless of whether the inputs (first data elements) follow a similar pattern of the outputs (second data elements). This position is based on the fact that Guiver et al. teaches in Column 10, Lines 4-11 that the correct output doesn't have to be known in order to determine a winning weight).

Regarding claim 16:

Guiver et al. teaches

The apparatus wherein said means for determining is operable to:

fit said first data set into a first curve (C 2, L 30-34; "*input space of interest*"; The examiner takes the position that the input space taught in the invention of Guiver et al. anticipates the first curve of applicant's claimed invention), wherein said first curve is represented in the form of a first polynomial function having a first set of coefficients (C 6, L 2-4; "*the model to be developed using this working set may be any data-driven form of model: linear, neural, polynomial, rational polynomial*"; The examiner takes the position that by teaching the use polynomial, Guiver et al. anticipates the use of functions as taught in applicants claimed invention. Additionally the examiner takes the position that coefficients are an inherent part of polynomials);

fit said second data set into a second curve (C 4, L 50-53; "*output space*"; The examiner takes the position that the output space taught in the invention of Guiver et al. anticipates the first curve of applicant's claimed invention), wherein said second curve is represented in the form of a second polynomial function having a second set of coefficients (C 6, L 2-4; "*the model to be developed using this working set may be any data-driven form of model: linear, neural, polynomial, rational polynomial*");

compute a distance between said first set of coefficients and said second set of coefficients (The examiner takes the position that coefficients are equivalent to the weights taught in the invention of Guiver et al. This position is based on applicant's specification which teaches in Paragraph 0047 that "[the] distance [the] each point from a corresponding point on the line/curve may be computed as [the] difference between the observed and predicted results". The process of calculating distance between observed result and predicted result using coefficients is anticipated by the process of calculating the distance between input data and output data using weight as taught by Guiver in Column 9, Line 64 – Column 10, Line 32); and

check (C 7, L 8-9; "*the match between each weight factor is computed*") whether said distance is less than a threshold (C 10, L 28-30; "*minimum distance*"), wherein said first plurality of data elements are determined to follow a similar pattern as said second plurality of data elements if said distance is less than said threshold.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Guiver et al.* (USPN 5,809,490) in view of *Carney.* (USPN 2004/0093315).

Regarding claim 7:

Guiver et al. teaches the method of claim 4, but fails to teach the first and second data sets comprising stock share prices or corresponding stocks.

However, Carney does teach,

The method wherein each of said first data set and said second data set comprises stock share prices or corresponding stocks (P 0051; "*if the user wishes to train a neural network that predicts movements in a particular stock price, then he may wish to input historical data that represents how this stock behaved in the past*").

It would have been obvious to one skilled in the art at the time of invention to combine the invention of Guiver et al. with the invention of Carney for the purposes of reducing the number of computations (*Guiver et al.*; "*a smaller data set significantly reduces the model building or analyzer construction process*") and predicting a stock price (*Carney*; "*train a neural network the predicts movements in a particular stock price*").

Regarding claim 12:

Guiver et al. teaches the computer readable medium of claim 11, but fails to teach the first and second data sets comprising stock and share prices or corresponding stocks.

However, Carney does teach,

The computer readable medium wherein each of said first data set and said second data set comprises stock share prices or corresponding stocks (P 0051; "*if the user wishes to train a neural network that predicts movements in a particular stock price, then he may wish to input historical data that represents how this stock behaved in the past*").

It would have been obvious to one skilled in the art at the time of invention to combine the invention of Guiver et al. with the invention of Carney for the purposes of reducing the number of computations (*Guiver et al.*; "*a smaller data set significantly reduces the model building or analyzer construction process*") and predicting a stock price (*Carney*; "*train a neural network the predicts movements in a particular stock price*").

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Dhaene et al. (USPN 6,295,635) is cited for his adaptive multidimensional model for general electrical interconnection structures by optimizing orthogonal expansion parameters. Rai (USPN 6,961,719) is cited for his hybrid neural network and support vector machine method for optimization. Breeden et al. (USPubN 2003/0225659) is cited for his method of retail lending

risk related scenario generation. Kofman et al. (USPN 6,542,249) is cited for his three-dimensional measurement method and apparatus

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adrian L. Kennedy whose telephone number is (571) 270-1505. The examiner can normally be reached on Mon -Fri 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on (571) 272-3687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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